

Decimals

Knowledge Organiser

Key Vocabulary

decimal place

decimal fraction

recurring decimal

equivalent fraction

tenth

sharing

partitioning

exchanging

rounding to 3d.p.

hundredth

thousandth

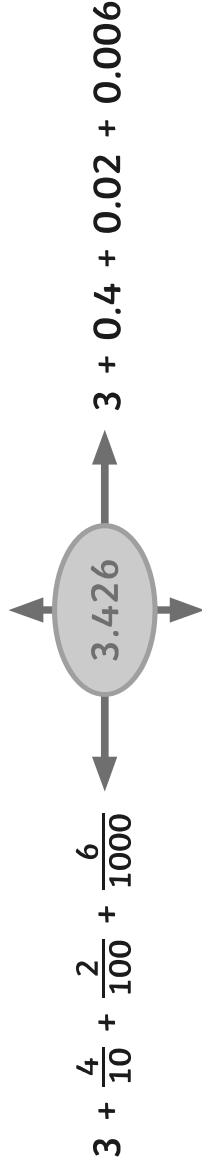
equal to

remainder

grouping

Place Value

Tens	Ones	tenths	hundredths	thousandths
	1 1 1	0.1 0.1 0.1	0.01 0.01	0.001 0.001 0.001



1	2	3	4	5	6	7	8	9
0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.001	0.002	0.003	0.004	0.005	0.006	0.007	0.008	0.009

Fractions to

Decimals

$$\frac{7}{20} = \frac{35}{100} \text{ or } 0.35$$

$$\frac{7}{25} = \frac{28}{100} \text{ or } 0.28$$

$$\frac{7}{50} = \frac{14}{100} \text{ or } 0.14$$

$$\frac{8}{200} = \frac{4}{100} \text{ or } 0.04$$

When the denominator is not a factor or multiple of 100

$$\frac{7}{8} = 7 \div 8$$

0	8	7	5
8	7	0	4

Dividing Decimals by Integers

$$8.12 \div 4$$

2	.	0	3
4	8	.	1 2

$$6.93 \div 3 = 2.31$$

Ones	tenths	hundredths
1 1	0.1 0.1 0.1	0.01
1 1	0.1 0.1 0.1	0.01
1 1	0.1 0.1 0.1	0.01

Decimals

Multiplying and Dividing by 10, 100 and 1000

Thousands	Hundreds	Tens	Ones	tenths	hundredths	thousandths
		2	2	0	8	
		2	0	8		
		2	0	0	8	

$\leftarrow \times 10$ (from 2 in Tens to 2 in Hundreds)
 $\rightarrow \div 10$ (from 8 in hundredths to 8 in tenths)

Thousands	Hundreds	Tens	Ones	tenths	hundredths	thousandths
4	3	5	0	5		
4	3	5	0	5		
4	3	5	0	5		

$\leftarrow \times 100$ (from 4 in Tens to 4 in Thousands)
 $\rightarrow \div 100$ (from 5 in hundredths to 5 in tenths)

Thousands	Hundreds	Tens	Ones	tenths	hundredths	thousandths
1	3	5	1	3	5	1
1	3	5	1	3	5	1
1	3	5	1	3	5	1

$\leftarrow \times 1000$ (from 1 in Tens to 1 in Thousands)
 $\rightarrow \div 1000$ (from 1 in thousandths to 1 in tenths)

Multiplying Decimals by Integers

$$3.21 \times 3 = 9.63$$

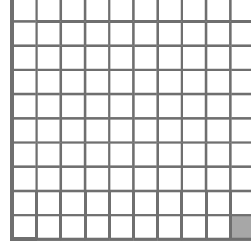
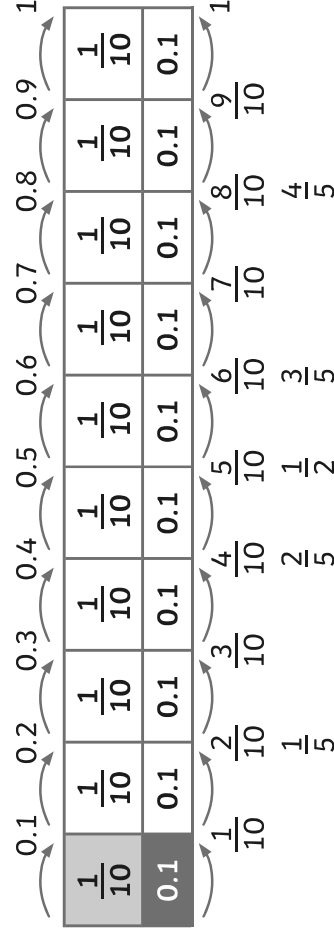
3	4	5
×		3
1	0	3
		5

Ones	tenths	hundredths
1	1	0.01
1	1	0.01
1	1	0.01

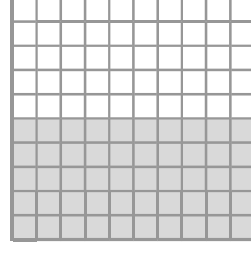
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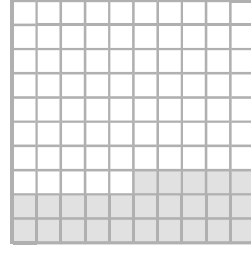
Decimal Numbers as Fractions



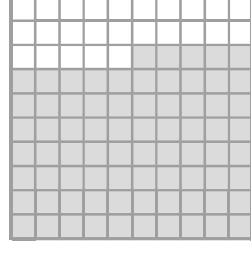
$$\frac{1}{100} = 0.01$$



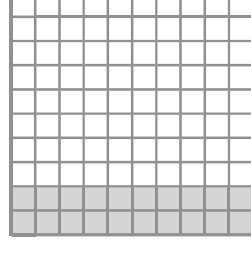
$$\frac{5}{100} = \frac{1}{20} = 0.05$$



$$\frac{25}{100} = \frac{1}{4} = 0.25$$



$$\frac{75}{100} = \frac{3}{4} = 0.75$$



$$\frac{20}{100} = \frac{1}{5} = 0.2$$

$$\frac{1}{3} = 0.33 \quad \frac{1}{8} = 0.125 \quad \frac{1}{1000} = 0.001$$